

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings of claims in the application:

**Listing of Claims:**

1-63 (canceled)

64 (currently amended): A system for detecting a macromolecular analyte comprising:  
a removably insertable rigid and structurally self-supporting probe having a sample presenting surface for presenting the macromolecular analyte to a laser desorption ionization energy source that emits energy capable of desorbing and ionizing the macromolecular analyte from the probe, wherein at least the surface comprises a non-metallic material selected from the group consisting of polystyrene, polypropylene, polyethylene, polycarbonate, nylon, starch, agarose, and dextran;  
a laser desorption ionization energy source that directs laser energy to the sample presenting surface of the probe surface for desorbing and ionizing the macromolecular analyte[.,,];  
a spectrometer tube;  
a vacuum means for applying a vacuum to the interior of said tube;  
electrical potential means within the tube for applying an accelerating electrical potential to the desorbed and ionized analyte; and  
a detector in communication with the probe surface that detects the desorbed macromolecular analyte; and  
means for detecting the mass of the ions by their time of flight.

65-85 (canceled)

1                   86 (currently amended): A method for detecting a macromolecular analyte  
2 comprising the steps of:

3                   a)       providing a system comprising:

4                       (1)     a removably insertable rigid and structurally self-supporting probe  
5 having a sample presenting surface for presenting the macromolecular analyte to a laser  
6 desorption ionization energy source that emits energy capable of desorbing and ionizing the  
7 macromolecular analyte from the probe, wherein at least the surface comprises a non-metallic  
8 material selected from the group consisting of polystyrene, polypropylene, polyethylene,  
9 polycarbonate, nylon, starch, agarose, and dextran, wherein the macromolecular analyte is  
10 presented on the probe surface[.,.];

11                       (2)     a laser desorption ionization energy source that directs laser energy  
12 to the sample presenting surface of the probe surface for desorbing and ionizing the  
13 macromolecular analyte;

14                       (3)     a spectrometer tube;

15                       (4)     a vacuum means for applying a vacuum to the interior of said tube;

16                       (5)     electrical potential means within the tube for applying an  
17 accelerating electrical potential to the desorbed and ionized analyte; and

18                       [[3]] (6)     a detector in communication with the probe surface that  
19 detects the desorbed and ionized macromolecular analyte; and

20                       (7)     means for detecting the mass of the ions by their time of flight;

21                   b)       desorbing and ionizing at least a portion of the macromolecular analyte  
22 from the surface by exposing the macromolecular analyte to energy from the laser desorption  
23 ionization energy source;

24                       c)     accelerating the desorbed and ionized analyte toward the detector; and

25                       [[c]] d)     detecting the desorbed and ionized macromolecular analyte with  
26 the detector; and

27                       e)     detecting the mass of the ions by their time of flight.

1                   87 (canceled)

1                   88 (currently amended): The method of claim [87] 86 further comprising before  
2 step (b) the step of modifying the macromolecular analyte chemically or enzymatically while  
3 deposited on the probe surface.

1                   89 (currently amended): The method of claim [87] 86 further comprising after  
2 step (c) the steps of:

3                   d)       modifying the macromolecular analyte chemically or enzymatically while  
4 deposited on the probe surface; and

5                   e)       repeating steps b) and c).

1                   90 (currently amended): The method of claim [87] 86 wherein the probe surface  
2 comprises an array of locations, each location having at least one macromolecular analyte  
3 deposited thereon; and step (b) comprises desorbing and ionizing a first macromolecular analyte  
4 from a first location in the array;

5                   and wherein the method further comprises the step of:

6                   d)       desorbing and ionizing a second macromolecular analyte from a second  
7 location in the array; and

8                   e)       detecting the desorbed and ionized second macromolecular analyte with  
9 the detector.

91-100 (canceled)

1                   101 (currently amended): The method of claim [87] 86 wherein the  
2 macromolecular analyte comprises a protein or a peptide.

102-107 (canceled)

1                   108 (currently amended): The system of claim [65] 64, wherein the  
2 macromolecular analyte is a biomolecule.

1                   109 (currently amended): The system of claim [65] 64, wherein the  
2 macromolecular analyte is a biomolecule from an undifferentiated sample.

1                   110 (currently amended): The system of claim [65] 64, wherein the  
2   macromolecular analyte is a protein or a peptide.

1                   111 (currently amended): The method of claim [87] 86, wherein the  
2   macromolecular analyte is a biomolecule.

1                   112 (currently amended): The method of claim [87] 86, wherein the  
2   macromolecular analyte is a biomolecule from an undifferentiated sample.

1                   113 (currently amended): The method of claim [87] 86, wherein the  
2   macromolecular analyte is a protein or a peptide.

114-120 (canceled)

1                   121 (currently amended): The system of claim [65] 64, wherein the  
2   macromolecular analyte is a nucleic acid.

1                   122 (currently amended): The system of claim [65] 64, wherein the  
2   macromolecular analyte is a carbohydrate.

1                   123 (currently amended): The method of claim [87] 86, wherein the  
2   macromolecular analyte is a nucleic acid.

1                   124 (currently amended): The method of claim [87] 86, wherein the  
2   macromolecular analyte is a carbohydrate.

125 (canceled)

1                   126 (currently amended): The ~~method~~ system of any of claims ~~64-65, 108-110,~~  
2   ~~121, 122~~ 64 or 137-141 further comprising applying to the macromolecular analyte a matrix  
3   material for promoting desorption and ionization of the macromolecular analyte on the surface.

1                   127 (currently amended): The method of any of claims ~~86, 88-90, 94, 95,~~ 101,  
2   111-113, 123, 124 or 144-148 further comprising applying to the macromolecular analyte a

3 matrix material for promoting desorption and ionization of the macromolecular analyte on the  
4 surface.

128-136 (canceled)

1 137 (previously presented): The system of claim 64 wherein the non-metallic  
2 material is polystyrene.

1 138 (previously presented): The system of claim 64 wherein the non-metallic  
2 material is polypropylene.

1 139 (previously presented): The system of claim 64 wherein the non-metallic  
2 material is polycarbonate.

1 140 (previously presented): The system of claim 64 wherein the non-metallic  
2 material is nylon.

1 (previously presented): The system of claim 64 wherein the non-metallic  
2 material is dextran.

142-143 (canceled)

1 144 (previously presented): The method of claim 86 wherein the non-metallic  
2 material is polystyrene.

1 145 (previously presented): The method of claim 86 wherein the non-metallic  
2 material is polypropylene.

1 146 (previously presented): The method of claim 86 wherein the non-metallic  
2 material is polycarbonate.

1 147 (previously presented): The method of claim 86 wherein the non-metallic  
2 material is nylon.

- 1                   148 (previously presented): The method of claim 86 wherein the non-metallic
- 2   material is dextran.